**T\_Carroll\_Thought Provoker 1**

In chapter 1, In defining the field of Instructional Technology, Reiser notes the timeline of changes prevalent in the evolution of this field. One important notation he made during the 1963 definition formulation, seemed to be a turning point for the way Instructional technology is defined. Reiser noted the definition provided from the Association for Educational Communications and Technology turned away from the type of media used in instruction to an emphasis placed on the actual learning event. He notes that, “In addition, the definition statement placed an emphasis on learning rather than in instruction (2).” Reiser notes that this ‘turn’ was a significant force in defining Instructional technology for the focus it has today. This statement was of importance to me as a speech therapist in the schools, as we seek to incorporate standards with therapeutic practice. So often, as therapists, we are trained to believe that if we are not sitting right in front of a student providing them with human feedback they are not learning. However, after having participated in the Instructional Technology program at West Georgia for some time now, I have realized that even specialized intervention and therapeutic practice can be accomplished just as successfully in other ways.

     In chapter 2, Branch (1996) and Merrill (2007) further define Instructional Technology through the models of the design present in the field. After discussing the nine elements present in the general systems concept (8) as well as ADDIE (9), one important factor that they noted, that I think exemplifies the different roles Instructional Technology presents to learners is the point that “Teacher and other forms of instruction are simply means to an end of learner performance.”(10). Branch and Merrill () note that one must not assume that a live teacher is always needed in a learning environment for learning objectives to be accomplished. Rather, learning can be more of a student-centered focus than that of a teacher-directed focus (e.g. lectures, etc.). This concept furthers the notion that specialized interventions, such as speech intervention, can be accomplished through more student-centered methods: As long as the focus is on ‘learner performance’ (e.g. starting with the task to be learned as in the pebble-in-the-pond model), not as much weight as traditionally used, should be applied to the method of delivery.

     Finally in chapter 3, Reiser reviews the historical growth of technology in instruction. Referencing more use of technology in the military vs. education was significant in that it showed the ‘disconnect’ within a society for advancement in society. Would it not be something necessary in public education? It was also noted that teachers should not have a choice in how instruction is delivered, although they primarily do. Reiser pointed out that, ‘of the many lesson we can learn by reviewing the history of instructional media, perhaps one of the most important involves a comparison between the anticipated and actual effects of media on instructional practices.” Edison, who had predicted widespread use of visual instruction, was sorely wrong, although there was growth. Funds were being pooled into this technology. When the funds ran out, so did the interest. The interest? Where is the source of the interest? The teacher,  pretty much. Administration can tout ‘use this or use that,’ but it only has to be used to the degree the teacher feels comfortable using the technology. If the teacher is still getting the job done with traditional instruction, teachers are used to technologies running in and out of the classroom. All they have to do is wait it out and the new technology will go away. No need to invest a lot of time into the incorporation of technology, even with the traditional use of computers as drill and skill devices (that’s what I use mine for). I think, though, because technology use is so pervasive now, teachers have no choice but to incorporate more use of technology in the classroom, even if it is just for communicating to parents (e.g. texting, classroom web-sites). These are even ‘old’ technologies, but it is a starting point for some who resist the techno-age. I myself have a challenge to trust my students to use technology to create instead of just drill them on isolated skills on the computer, but therapy sessions are so short-lived, it may be more difficult from a therapeutic standpoint.

**References:**

Branch, R. (1996). Instructional design as a response to the complexities of instruction. In N.

       Venkataiah

(Ed.), *Educational technology* (pp. 21-49). New Delhi: S.B. Nangia for APH Publishing

       Corporation.

Merrill, M.D. (2007). A task-centered instructional strategy*.  Journal f Research on Technology*

*in Education, 40*(1), 33-50.

Reiser, R., & Dempsey, J. (2012). *Trends and issues in instructional design technology*. (3rd

      ed., pp. 01-34). Boston, MA: Pearson Education.

**Thought Provoker 2 - Chapters 4,5,6**

In looking at chapter 4, Driscoll reviews varying views of learning. Although Skinner's behavioral modification and cognitive processing concepts are reviewed, it was more significant in learning that 'cultural' learning and social implications within the culture as being significant in the learning process as well. Driscoll points out, based on Lemkes' (1997) work that "learning is to be understood in terms of the activities of the people living within a particular socio-cultural understanding." (p.36) The author goes on to reference learning mathematical skills in a classroom vs. learning mathematical skills from selling candy on the streets. Even in my own experiences as a therapist in several types of school climates, I have observed students in lower socioeconomic areas as being more aware of their surroundings and careful, for example, in keeping and counting money, as money might get stolen from them. Hence, they tend to learn to count money earlier than students who are in less threatening settings. As a therapist, I do see how the learning drives are fashioned in different settings. The expectation for learning of others, such as teachers, parents, and students, and communities, plays a big factor even beyond my expectations.

In chapter five, Wilson goes into more detail discussing constructivism's historic presence in learning. As indicated in chapter four, some believe that constructivist-type assessment learning is ineffective in gauging learning. After citing the basic precepts of constructivism, Wilson notes that "the instructor shifts role from "sage on the stage" to "guide on the side" - still sharing information where needed, but primarily engaging learners in authentic and challenging learning opportunities." (45). After discussing the 'common sense' inherent in constructivism-type learning, difficulty arises in defining what works and even what constructivism really is. She references positive outcomes, such as more authentic and meaningful learning experience as well as some downsides to this type of learning, such as learner responsibility, level of support and design required, and maintaining classroom structure. Although I aim to give my students more problem-based constructive opportunities so that they are afforded the opportunity to learn in a more meaningful way, with support, I tend to struggle with maintaining the organization and control of their learning outcomes, sometimes due to student motivation, and other times to student cognitive limitations or the need to take excessive data. It can be a real challenge to maintain relevant meaning with with these demands and/or constraints, but the need to find a way to do so, I believe, still remains.

In chapter six, which which describes the learning sciences, Hoadley and Haneghan describe four related theoretical ideas that  immerse into the understanding that culture has a significant impact on learning and learning outcomes. From these theories of cognitive development and processes, the authors note that “ People’s cognitive processes are created in conjunction with the tools of the culture, and at the same time, the tools of the culture are enhanced by the thinking.” (p.54). This is significant beyond simply incorporating advancements in technology into instruction. For me, it is more reflective of using tools of the time that are reflective of society’s use instead of new to a society. The type of technology incorporation can also needs consideration for different communities. I am reminded of the time when I was in elementary school. Laser discs, that looked similar to records, were used with these new laser disc players. The use of this technology quickly waned and was not even used the next school year. I think if the focus is on utilizing new ‘standard’ tools of our society and communities as a means of instruction and as reflected in these environments, we can continue to incorporate the culture of learning through these ‘standard’ tools, and as these tools change over time, there is less desensitization of educators who have to deal with ever-changing tools just because an administrator/school board got excited over the next ‘big thing.’

**References:**

Driscoll, M. P. (2005). Psychology of learning for instruction (3rd ed.). Needham Heights, MA:

Allyn and Bacon. Lemke, J. L. (1 997). Cognition, context, and learning: A social semiotic process. In D. Kirshner & J. A. Whitson (Eds.), Situated cognition: Social, semiotic, and psychological perspectives. Mahweh, NJ: Lawrence Erlbaum Associates.

Hoadley, C. (2007). Theories and methods from learning sciences for e-learning. In R.

Andrews & C. Haythornthwaite (Eds.), Handbook of e-learning research (pp. 1 39–1 56). Thousand Oaks, CA: SAGE Publications.

Reiser, R., & Dempsey, J. (2012). *Trends and issues in instructional design technology*. (3rd

ed.,pp. 01-34). Boston, MA: Pearson Education.

Wilson, B. G. (2005). Broadening our foundation for instructional design: Four pillars of

practice. Educational Technology, 45(2), 1 0–1 5. Draft online:< a href="<http://carbon.ucdenver.edu/~bwilson/Pillars.html>">http://carbon.ucdenver.edu/~bwilson/Pillars.html</a>

**Thought Provoker 3: Chapters 7,8,9** In chapter seven, Jonassen emphasizes the importance for learning to be problem based. He states that “problem solving should be the central focus for all education and then [he describes] the building blocks of problem based learning environments and how those components are integrated through cognitive scaffolds.” (p.64) Even as a speech therapist, I have always tried to incorporate problem based learning. Students often are at a level, though, were they require drill for learning different skill sets, however, I continue to struggle with finding a plethora of solutions for problem-based learning for special needs students having cognitive, processing, and language deficits. I do agree that problem solving is more effective in that it offers authenticity, relevance, and engagement to the learner, as long as the learner is not easily frustrated by organizing and making sense out of multiple streams of information and thought processes. It was interesting to note the different types of problems he addressed for different situations, such as from decision-making problems, which are more structured to design problems which are more Ill-structured. As a special needs interventionist, though, I think problem-solving has to be approached with this population with many scaffolds and cases, such as cases as worked examples.

In chapter eight, Reigeluth describes what postindustrial education looks like through the vein of technology. Instead of teachers being the “sage on the stage” they become guidance on the side as students take the lead for learner-centered focused learning. I was taken aback when I learned the postulated reasoning behind the structure of the educational system, although I had previous awareness of the effects of the Industrial age on education. Reigeluth put it best when he stated that, “ We must recognize that the main problems with our education and training systems is not the teachers or the students , it is the system – a system that is designed more for sorting than for learning.” (p.75)n As a student in education before my specialized degree, I had often wondered why students were not allowed to work on their level and move from subject to subject within grade levels to their level of functioning. And I had always wondered why criterion did not trump norm-referenced. I would think that the standard should be the capability, the aptitude, not the comparison of one with another. I often have the opportunity within my own setting to slow the pace down for students who may not otherwise have such opportunity in the classroom. Therefore, if I am working on a student developing the concept of the “main idea” I can work with them on their reading level, say a 2nd grade level, even if the student is in 5th grade. Or, I can read information to students. However, as the demands increase on student performance to meet 100%, I see the standards creeping in more and more into these support areas where students should have the opportunity to work and develop at their level to higher levels. I am afraid that in the near future, therapists will be more of a teacher than a clinician and progress with goals and objectives will become more of a time-based goal than that of an attainment-based one.

In chapter nine, Keller and Deinmann discuss the factors of motivation, volition, and performance. In the chapter, the authors discuss how although there was and is much interest in the motivation behind learning the fusion of motivation into the learning design process has been limited. In comparing trait vs. state the authors clarify the difference, with ‘states’ being more context dependent upon the learning event and also the most prevalent. However, the authors noted that “motivation to learn is promoted when a learner’s curiosity is aroused due to a perceived gap in a current knowledge. “ (p. 87) I first did not agree with this statements, as I reflect on my own students who were aware they did not know certain things but were not motivated by the ‘gaps’ in their learning either, however I neglected , at first, to contemplate the word, “perceive.” As a individual learner, I like to find out things that I don’t now because that is more of my trait. Also, I can put my own focus in a state that is beneficial to something that I am reading or engaged in, even if I am not interested. However, there are times when you hear students or even your own children reference learning something new by saying, “Why do I need to learn/know that anyway?” Students may be told the significance of why they need to learn a concept or a skill, but until the student actually has his/her own perceived gap there really is no ‘perceived’ gap because the learning is irrelevant for that learner. For example, as a student in undergraduate school, once completing the highest level of math I could attain (elementary calculus), I was left wondering what the significance of it all was, back to Algebra I: There was an obvious gap in my learning as I struggled to understand concepts, but even though my learning traits drove me to accomplish as much as I could up the math ladder, I felt it really was a waste of time. For students who do not have the trait of accomplishment, the gap in learning becomes even more widened by the students who do not see the significance or relevance in what they are learning that can be applied to their lives and the real problem they will have to face and solve as adults. There might be room for applying a model of learning, such as that of Wlodkowski’s model of motivational design, which prescribes motivation-based tactics to use during different aspects of instruction, for students who have lost or never had the trait of self-motivated inquiry.

**T\_Carroll\_Thought Provoker 4**

In terms of the Cognitive Instructional Design method that would be of benefit to my students in language therapy, I would probably have to choose a combination of two. The concept mapping would be a beneficial practice to help students to structure the learning event. Concept mapping, as I have researched, compares concepts in a graphical form so that connections can be seen among concepts. I have used these with my students to assist them in organizing concept constructs, however they tend to depend too heavily on things such as graphic organizers. It becomes difficult for them to deviate from and generalize their guided thinking from the concept mapping. Therefore, I would use concept mapping to act as a recipe for using advanced organizers.

For example, if we were working on main idea in grade-level text, I might start by using concept mapping to compare the connections between seemingly three unrelated things to find a connection, such as in riddles, then find the type of patterns present in details that connect to the main idea. After identifying these patterns through many examples, I may guide students to create concept maps for associating basic vocabulary that they are familiar with to new vocabulary they will have to develop an understanding of in their text reading. Therefore, when we (finally) arrive at the new learning using an Advanced Organization setup, we will have the concept mapping patterns established for patterning for the main idea (after much practice) + previous knowledge vocabulary to connect to the new vocabulary students need to learn (ex. students already know what 'bad' means but the text to read uses the word 'menace.' Students connect their basic vocabulary to new vocabulary and increase their understanding of the information). . . . . (and most people think speech therapists just fix speech sounds ;0)

**Carroll\_Thought Provoker 5**

After reviewing the Prescriptive Instructional Design Models, I determined that the Dick and Carey model, although extensive, may be beneficial in aiding my quest to develop lessons tailored to the standards as well as student goal objectives. Although consideration of diffrerent learning styles is not a direct consideration as in Robert Gagne's model, the Dick and Carey model allows analysis of student through the interrelationship between context, content, learning and instruction. This model allows for the analysis of students' intellectual skills, as many students I work with have psycho-educational evaluations.

I would use this to build up to a major task that may seem difficult for my students to do, at least in their eyes. For example, I may have a goal of summarizing text, but my students have different deficits that impact their ability to perform. They also have learned helplessness and often do not think they can do things like their classroom peers. I would look at the skills students would need to be able to do (such as categorizing and explaining relationships, riddles, understanding the main idea and supporting details) and plan these lessons/activities for students using a criterion-referenced assessment as simple as a computer program, worksheet, or developed test. Each learning area would be addressed using most of the steps, working them up to summarizing, and then I would use a more formative assessment, to include viewing work samples of classwork exhibiting skills taught in the smaller-group setting necessary for summarizing as well as their ability to summarize.

I  would delete some of the steps as I work through all of the skill sets, as most of these students have psycho-educational evaluations which can also be used to gauge how they learn best, as well as clinical observations and familiarity with students, although assessing may provide new information not previously known about student learning and behavior.

**Thought Provoker 6**

One of the Constructivist models that I think I would appreciate in use the most would be the Discovery Learning model. Because there are web 2.0 tools, such as WebQuest, that are designed around this model, it may be easier to implement a dynamic progression of active learning experiences through. I am always interested in learning of ways that students can learn through a more hands-on, multisensory experience. Discovery Learning encompasses three main attributes of discovery learning: exploring and problem solving to create, integrate, and generalize knowledge; student driven, interest-based activities in which the student determines the sequence and frequency; activities to encourage integration of new knowledge into the learner’s existing knowledge base. It may be a task to align standards with items students are interested in, but I may be able to survey students at the beginning of the year to assess their interest-level in current media, hobbies, sports, etc. With this in mind, Discovery learning encourages students to ask their own questions and arrive at their own hypothesized answers, shaping them as they continue to investigate and participate in learning experiences. This, in turn, can keep students interested and focused on learning activities involved incorporated into the model.

**Thought Provoker 7:** In chapter 14, the authors discuss Human Performance Improvement (HPI) and Human Performance Technology (HPT). According to Kaufman (2006), HPI involves achievement through human accomplishment (p.135). These accomplishments must be valued by the organization for which it is aimed at. For example, knowing how to crack a RubixTM cube is not an achievement considered to positively impact standards achievement in geometry, for example. Schultz (1981) and Becker (1993) found that “. . . as the knowledge and performance capabilities of populations improve so too, do the economic successes of countries and their peoples.” (p.136) If HPI is what we wish to achieve as a society and HPT is the way in which we seek to achieve the performance result, HPT therefore in the educational field, can be used to identify and analyze gaps present in students’ performance and the actual desired performance. One area of weakness I have seen with education, as being different to education in the 80’s and 90’s at least, is the emergence of invented spelling. Students were no longer required to spell words correctly in the elementary grades as long as they were ‘sounding it out.’ However in later grades, students are required to spell words correctly or suffer point reductions. The New strategy, invented spelling, has actually created the gap in students’ ability to spell words on a test but not spell the words correctly when writing or recalling the spelling at a much later date. It also negatively impacts students’ ability to further develop an understanding of phonetic and phonemic patterns in the spelling of English-borrowed words, negatively impacting students’ ability to apply basic phonic skills to new terminology. There is a ‘lack of transfer’ of skills on a more applicative level.

In chapter 15, Nyugen (2009) discusses Performance Support, which involves the access of methods and resources to foster human/group/systems performance. Nyugen noted that performance support systems should entail some form of web interface that allows for communication amongst information through a performance support brokers, such as a search engine, which undoubtedly contains an internal database and possibly an external one as well. He noted that “Tasks that are high-frequency/low-criticality or low-frequency/high-criticality can also be delivered by performance support.” This was significant for the type of work that I aim to do with my students, as I seek to teach them and help them understand specific language concepts and skills. Being able to have access to a performance support system for language concepts would be thoroughly awesome. Being a part of an adopted reading series would be highly beneficial, as the supports necessary for student skill development are already mapped out and embedded in the student’s curriculum.

Chapter 16 addressed knowledge management (KM) and learning. Rosenberg (2002) seeks to address the three different sides of knowledge - tacit, explicit, and common – in her exploration of knowledge management. As codification exemplifies explicit knowledge, collaboration, which involves tacit knowledge, is essential to my field. Rosenberg () notes that “Collaboration focuses on tacit knowledge by providing vehicles for people to surface what they know. Over time, this sharing validates the tacit knowledge . . . That’s how best practices are born.” (p.160). Collaboration, or tacit knowledge, is essential to the field of speech-language pathology, although many times professional development at the district level is confined to the codification level. Having a portal, such as a web-site that therapists can access in the county could prove beneficial to fostering district-specific collaboration that cannot come about as effectively through using external database/collaboration to effect change in a specific community and climate. I have suggested a web-site for district therapists where collaboration and even exchange of materials and resources could occur, however this is not currently being considered as feasible at this point. I hope that in the future, for my own district, that those that have enabling powers do so for a portal of collaboration amongst district therapists.

**References:**

Becker, G.S. (1993). Human capital: A theoretical and empirical analysis with special reference to

education ( 3rd ed.). Chicago: University of Chicago.

Kaufman, R. (2006). Change choices and consequences – A guide to mega thinking and planning.

Amherst, MA: HRD Press.

Nyugen, F. (2009). The effect of performance support and training on performer attitudes. *Performance*

*Improvement Quarterly, 22*(1), 95-114.

Reiser, R., & Dempsey, J. (2012). *Trends and issues in instructional design technology*. (3rd ed.,

pp. 01-34). Boston, MA: Pearson Education.

Rosenberg, M. (2002), August/September). The seven myths of knowledge management. *Context*

*Magazine*, 12-13.

Shultz, T.W. (1981). Investing in people: The economics of population quality. Berkeley and Los Angeles:

University of California Press.

**T\_Carroll\_Thought Provoker 8**

In chapter 21, the authors discuss the three main forms of instructional technology design in p-12 education: systems, products, and classroom based designs. As cited in the text Russell, Sorge and Brickner (1994) noted that "[W]e have found that the teacher is the most important ingredient for success when using technology. It is not the computer hardware or software. Good teaching comes first and technology second!" (p.208). The point being driven by presenting this statement is that the technology use is only as good as the instructional methods and design behind it and that teachers should not derive lessons that are primarily technology-driven but rather technology-infused as appropriate for the learning event(s). This is an important factor even for specialized educational intervention, such as speech therapy. In my therapeutic practice, I incorporate several different programs that reinforce and work on drills of skill-set development as I work one-to-one with another student on another skill. Oftentimes students need this type of practice in order to progress with skills on this level, however later, as they develop their skill level and/or academic demands, certain programs are no longer effective for the curriculum needs they demonstrate. Without the professional judgment and insight into the students' learning needs, ineffective programs may be used, when incorporating, yielding no significant improvement in student performance.

    After discussing certain ID models such as ASSURE, NTeQ, and ThinkSheets, the authors reference the results of an initiative, Ed-Tech, in noting technology integration across three states. The results of the initiative indicated that although engagement increased compared to traditionally-style classes, performance did not. From observations and analysis, suggestions related to technology integration efficacy surfaced addressing the importance of the instructor, the designer, the teacher, in other words the person supporting the technology. They advocated for instructors who present with the motivation and desire to incorporate technology along with a certain level of knowledge about technology as effective means to make the integration of benefit to the performance measures of students.

    Even after not really knowing what I was doing with program integration for my students, I found that I was able to gauge where students should be by a certain grade/age-level and used the program levels as a guide to moving students along and supporting their instruction in weak areas they could not attain through one-to-one interventions, use of graphic organizers, and step-by-step group work. Students could then move to the next program level as their performance level increased, indcating progress with the same concept, for example, at an increasingly more demanding level of complexity.

**References**:

Reiser, R., & Dempsey, J. (2012). *Trends and issues in instructional design technology*. (3rd ed.,pp.

      01-34). Boston, MA: Pearson Education.

 Russell, J.D., Sorge, D., & Brickner, D. (1994). Improving technology implementation in grades 512

      with the ASSURE model. The Journal. Retrieved July 18, 2009 from:

[http://thejournal.com/Articles/1994/04/01/Improving-Technology-Implementation-in-Grades- 512-With-the-ASSURE-Model.aspx?Page=1](http://thejournal.com/Articles/1994/04/01/Improving-Technology-Implementation-in-Grades-%20512-With-the-ASSURE-Model.aspx?Page=1)

**Carroll\_Thought\_Provoker 9:** In chapter 23, Visser discusses ways in which to develop learning for the global complexity we live in. Visser notes that although humans may not necessarily have the solutions to the counter outcomes of innovations that they have created, such as population explosion as a result of the agricultural age, that positive outcomes exist from human development beyond the expected. In this chapter, Visser discusses his gravitation to the field of Instructional Design and his experiences in developing countries in how instruction occurs/ed with the tools they have. He notes that “it is important to understand and appreciate this diversity of perceptions and create experiences that general meaningful learning that recognizes the profound connection between deliberately designed learning environments and their natural extensions into the world of informal learning.” (p.235) He noted earlier how under-developed areas of the world still have the capacity to learn and learn deeply through the tools that they have, even though technology is not around every corner as in more developed areas of the world.

Even in a society that stresses the importance of technological integration reform, Visser reminds us that it’s the meaningful experiences that are the ‘meat’ of educating others, regardless of the media used. For my students, although technology is beneficial for my them, my goal is to use whatever media/tools that are available and necessary to develop an understanding for a concept rather than use technology as a final means to instruction.

**Reference:**

Reiser, R., & Dempsey, J. (2012). *Trends and issues in instructional design technology*.

(3rd ed.,pp. 01-34). Boston, MA: Pearson Education.

**T\_Carroll\_Thought Provoker 10:** In chapter 31, Anderson reviews the varying definitions of web 2.0 tools since its advent. She goes on to describe the ‘affordances’ that Web 2.0 tools provide. She notes that “web 2.0 tools utilize individual and group contributions to create value.” (p. 300). This is certainly true as I have experienced this observation of hers. Having been a part of the program of Instructional Technology I went from not knowing what Web 2.0 was to benefitting from resources already created by web 2.0 as learning resources for my own value-added productions. For example, after creating my first Prezi in the summer of 2012, I was able to actually utilize this web 2.0 content with my students for language development of context clues. Students were engaged in the Prezi presentation, and this resource added to the additional interventions planned for their understanding of this concept. Anderson also goes on to discuss how Web 2.0 tools move beyond closed doors to other classrooms and learning environments. It has been to my advantage to search learning content developed by others and add to my own account, so that I can resource them later. One of the things speech therapists learn in school is not to re-invent the world. The exponential growth of knowledge via Web 2.0 tools alone are astronomical. Using digital resources is certainly advantageous over the use of an encyclopedia. Do you remember that? Having to complete a book report or term paper using books and reference material you either had at home or had to go to the library to use. And even in college – microfilm! Kids nowadays (I’m going to sound like my mom, now) have no idea what ‘we’ had to go through to write papers, reports, and put information on poster boards. Thank goodness for digital value-added tools such as these!

Additionally, Anderson notes how groups and organization use of web 2.0 tools allow for others to participate and engage with others as well. Supporting a constructivist approach for learning, Anderson notes that these tools are ‘helping to integrate formal education with the real lives and informal learning experiences of students.’ (p.302), although formal studies of Web 2.0 tools efficacy are very scarce. Limitations are also discussed, such as formal institutions’ and organizations’ hesitation to share peer-reviewed information over such systems, however there may be a climate of change in this current perception as open access courses, such as MOOCs , are being developed and utilized by university instructors and students. Anderson also eludes to the emergence of Web 3.0 tools using ‘smart’ data (p.305), noting the advent of technology support for the collaboration and value-added resources for an open learning market.

**Reference:**

Reiser, R., & Dempsey, J. (2012). *Trends and issues in instructional design technology*.

(3rd ed.,pp. 01-34). Boston, MA: Pearson Education.